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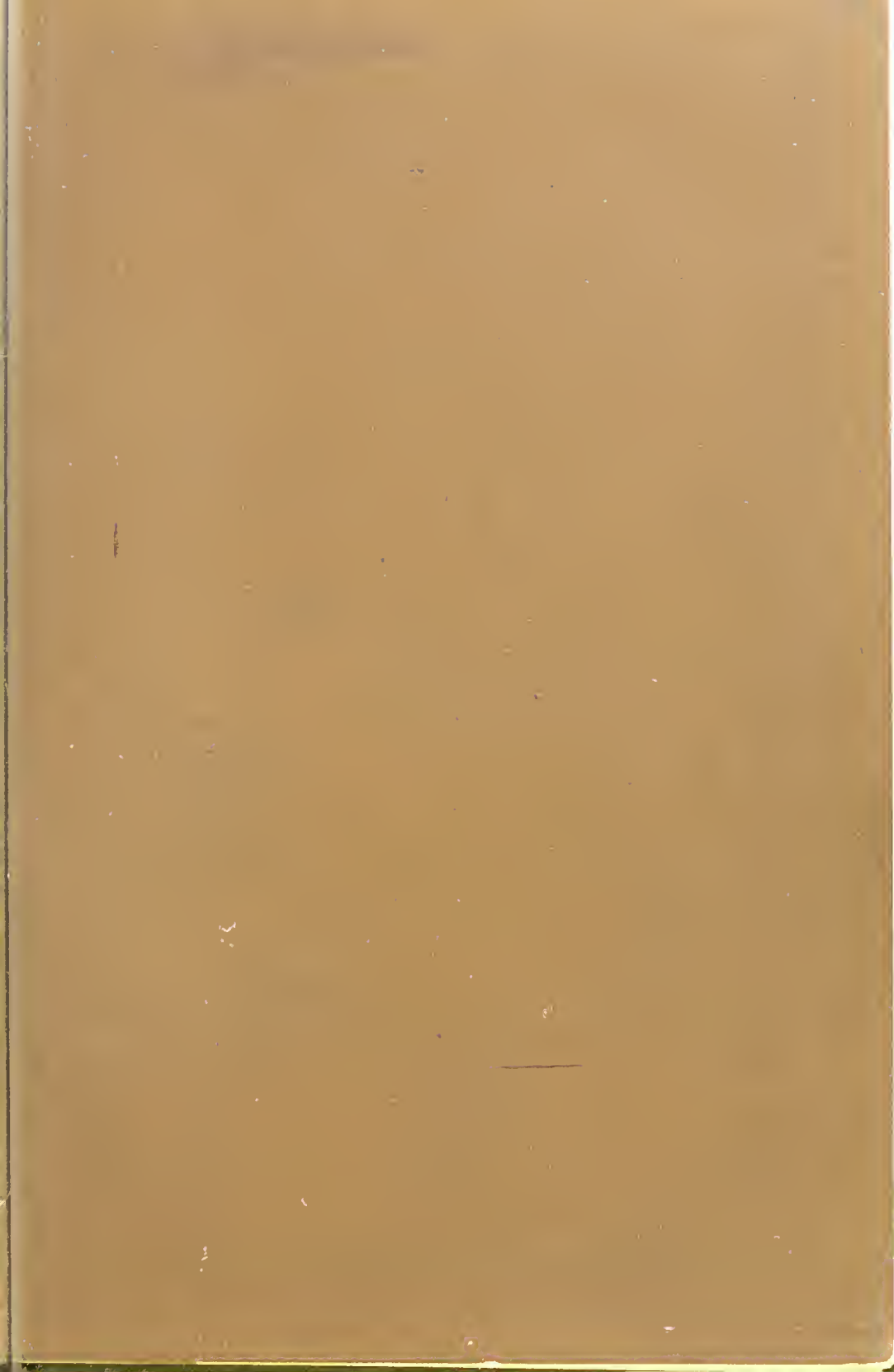


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ROUGH NOTES
ON
REMEDIES



A. It Robinson.

ROUGH NOTES
ON
REMEDIES

BY
WM. MURRAY, M.D., F.R.C.P. LOND.
NEWCASTLE ON TYNE

SECOND EDITION

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DEDICATED TO

DR. JAMES GREY GLOVER

OF LONDON

AND TO

DR. PHILIP BROWN

OF BLAYDON ON TYNE

TWO OF MY OLDEST AND BEST FRIENDS

PREFACE TO SECOND EDITION.

THE somewhat rapid sale of my first edition and the receipt of many appreciative letters seem to justify the issue of a second edition of these "Rough Notes."

However much it may fail in detail I feel assured that the main lines of this enquiry are in the right direction. If these lines of investigation were followed by others, who have time opportunity and experience, it would inevitably lead to an enhanced value of our old remedies which have too often been regarded as exhausted of all their virtues by previous research. To prove that our knowledge of these old fashioned drugs *is not exhausted*, may lead to renewed enquiry on the part of many who now hide their light under a bushel and never disclose their experiences. I will give one or

two illustrations of the kind of thing which has turned up in consultation with men who seldom or never appear in print. For instance, I remember being greatly astonished by Dr. B., when he told me he usually treated whooping cough in children by 30 drop doses of tincture of Indian hemp. Still more remarkable was the experience of Dr. F., who treated more than one case of uræmic coma successfully by small doses of opium frequently repeated. Surely such suggestive statements of facts are at any rate worthy of record, so that they may be tested by other careful and competent observers. I therefore again urge the adoption of my plan on a larger scale; we have stood almost still too long; bewildered by the profusion of new remedies presented to us by the pharmacæutists, and striking almost blindly with new fangled remedies while the old trusty swords of our ancient armoury lie rusting on the shelf.

November, 1896.

PREFACE TO FIRST EDITION.

These papers have appeared in the pages of "The Lancet" and "The Northumberland and Durham Medical Journal" at intervals during the last four or five years. I have received so many approving letters asking me to reproduce and to continue my efforts, that I now feel justified in issuing them as a small volume, in the hope that while some may be interested in their perusal, others may be induced to make a similar record of their experiences.

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ROUGH NOTES ON REMEDIES.

INTRODUCTION.

My chief object in publishing these "Rough Notes" is to draw attention to the fact that the action of some very old-fashioned remedies is by no means limited by our present knowledge. This mine of wealth is not yet exhausted, and in it may be discovered secrets which will throw a flood of light on other branches of therapeutics. I have more than once insisted on the idea that a full explanation of the action of such a remedy as mercury or its salts, would be of vast importance to us. If its action depends on processes which are chemical, or physical, or physiological, surely an explanation of it must be forthcoming in the advanced state of these sciences; not to speak of bacteriological or germicidal advances

which doubtless would contribute their share in such a discovery. To such as myself these researches are an impossible task, being a practitioner only and having none of the resources of strictly scientific methods, but the clinical physician can afford material aid and give a powerful stimulus to such researches by discovering facts, the result of clinical observation, any one of which may suggest the idea by which successful research in the laboratory may be guided. It is not therefore the mere *cure* of disease nor the relief of symptoms which prompts the pioneer in therapeutics; he is looking for that which will explain his facts, and give his medicines a far and wide application.

I have used the word "Cure" *advisedly*, because the tendency of many exponents of modern thought is to deny that we *cure* disease by medicines; this is wrong; we have undoubted evidence to the contrary. If a patient with epilepsy of fifteen years standing takes

100 grains of bromide of potassium daily for three months, and has no fits for twenty-five years afterwards, is he not *cured* of epilepsy? If a patient who is wasted with diabetes takes arsenic for a year, and has no trace of sugar for three years and is now in perfect health, is he not *cured* of diabetes? If not a cure, what is it?

Although my faith in medicines received a rude shock when I began to apply the teachings of the schools in my earlier years of practice, a more strict study and years of carefully repeated experiment have convinced me that our failures are not so much due to the impotency of the drug as to a want of the proper application of it. It is the want of a proper perception of the time when to use it, and the mode or method of its use, which leads to failure. Nor can we wonder at this when we look into many text-books of medicine and see (at the end of a learned dissertation) a compilation of remedies under the head of treatment, pro-

miscuous and indefinite enough to bewilder and lead astray the most penetrating mind. Each suggested remedy ought to be accompanied by a statement of the method to be used in giving it, and the various modifications of its use, and its combinations, if any really valuable knowledge is to be conveyed. Take such an ailment as neuralgia and we see this sort of thing under the head of treatment:—
“Quinine if the patient is enfeebled,” “iron if anæmic,” “arsenic is also useful in the above condition,” “the acute pain may be allayed by belladonna, opium, aconite, chloral, or the various bromides”; this is followed by a remark that “if the secretions are out of order they must be corrected,” and “any constitutional tendency, such as gout or rheumatism, must be met by appropriate remedies for these conditions”! Now where is the young practitioner to begin with such a chart of sailing orders? The chances are he will drive his patient half mad by a strong dose of quinine,

or make him worse than ever by some form of opiate. Then again any one of these remedies may fail for want of some other drug to temper or condition his main drug—and the dual combination may need even a third element to supplement and intensify the action of his chief remedy. Take for instance this case of neuralgia in a weak and irritable subject whose nerves vibrate "*pain*" on the slightest disturbance. We give quinine without benefit—rather increasing the nervous irritability of the patient. We then combine it with a full dose, say 25 drops, of hydrobromic acid, and we get a better result; still the pain is not removed and will not be, until the tonic and soothing effects of the quinine and hydrobromic acid are supplemented by a sufficiently large dose of belladonna, and then relief comes—relief to pain, to nerve irritability, and to exhaustion; and so we might multiply instances.

I refer in the next place to the method of so prescribing and administering our remedies as

to make them “agree” with the patient. The patient’s condition may clearly enough indicate the required remedy, but its mode of administration is the difficulty; *e.g.*, the well-known case of anæmic patients who need iron badly and yet cannot take it in the ordinary form without serious detriment. Here comes a great demand on the skill and penetration of the physician. Some will vary the preparation and its time and method of administration, others will endeavour to *prepare* the patient for it, and others will seek a more circuitous route by giving that which will stimulate and strengthen the assimilating and blood-forming organs and let them find the iron for themselves in the diet or food of the patient. For instance we again and again see anæmia disappear under the gentle influence of pepsin and oxalate of cerium before meals, the effect being to soothe and sustain a weak irritable stomach in its digestive efforts. Then again comes the question of the time of day when our doses are

to be administered—a perplexing question, often insoluble except we have our own experience of the patient's idiosyncrasies.

I see some patients who can take a tonic well enough in the forenoon, but a dose after dinner or even after lunch is fatal to its success, and sometimes this error as to time is carried to such excess that we have seen a patient take a dose of quinine and iron immediately after a cup of strong (afternoon) tea with cream and sugar; stomachs of iron are needed for such vagaries; and all this arises because the medicine has been prescribed "*bis vel ter die*" without a word of caution as to the time and hour *when* to take it.

The tendency of the day properly enough is to simplify the art of prescribing by giving as few drugs as possible, and some go so far as to advise and teach others to give only one drug at a time. This may be all very well as a matter of research in determining accurately the effect of one naked remedy, but it wont do

in practice, where the addition of a little peppermint water, or ginger, will make all the difference in the acceptability of the dose. What for instance would our Gregory's powder be to many without the ginger, and what to many others would this combination be without the aqua menth. pip. of the ordinary mist. mag. c. rheo. These homely illustrations are trifling compared with the more weighty combinations—such as those of chloral and bromide, opium and cannab. indica—or the still more weighty one of calomel and opium—a weapon needing to be tempered with rare skill if its objects are to be attained. Nor can it be said that even the most complex combinations are irrational or improper when we remember that they have been accepted with gratitude by the experience of mankind at large. Had it been possible to get the same amount of relief and comfort from the “one drug” system, we may depend on this, that men would have found it out long ago and the combinations

would have been discarded. I refer again to the simple case of Gregory's powder as an example, it is not that magnesia, rhubarb, and ginger were remedies unknown before, but the happy combination gave them universal acceptance. Not a few old-fashioned physicians used to improve even on Gregory by combining the powder with aromatic ammonia, and later the super-addition of chloroform (not chloric ether) has helped to maintain the reputation of a very complex combination. Nay, I go further and could prove by many citations that such a mixture combined with tincture of stramonium is our very best remedy for the relief of asthma. I think I have pushed this argument for combinations far enough, and will leave it by urging the study of combinations as a most important element in medical practice. We find an analogy to the good *combiner* in the good cook—the latter owes his or her success largely to a correct knowledge of combinations; the various combinations in

a good and digestible dish need the addition of seasonings, many and varied, to make the appeal to the palate and stomach a success. From this we may learn a valuable lesson in our diet of drugs; not to leave the naked element to disgust and disagree, but rather to clothe it and cover it in a palatable and pleasant form for the comfort of our patients.

There is another point to be carefully weighed by him who is bold enough to administer the large doses which are indicated in these papers. It is the "illness" of the patient which renders them harmless and potent for good. The tolerance of a medicine is largely dependent on the need for it; and its intolerance is chiefly due to an absence of those conditions which demand its use.

The patient whose system is charged with the products of specific disease can take iodide of potassium or mercury with a sense of almost immediate relief, in doses which at another time would make him ill; in the same way as

alcohol or opium can at one time act as a boon and at another as a bane to the patient. In this way our medicines are often a test of the nature of a disease, a kind of Ithuriel spear for the detection of obscure pathological demons. This principle is of wide application in the use of such remedies as arsenic, opium, mercury, quinine, &c. The difficulty which faces us in treating disease often lies here, we cannot detect the "need," and when the detective faculty has been cultivated by the experienced practitioner, he can hardly impart his methods or lay down definite rules for the guidance of others. Thus his experience too often dies with him and is lost, and others have to toil over the same ground and gather the penetrating instinct by long and often painful experience. It is easy to lay down rules, but how difficult to point out all the exceptions to our rules! and yet this is often the secret of successful treatment.

Thus the problem is presented to us, and it

cannot be simplified except we winnow out a fresh fact or two year by year, or month by month, and carefully make note of them and publish them. This is my apology for publishing these "Notes." They may evoke similar efforts by more able and more experienced men, and may tend to raise the question of storing our therapeutic experiences. Until some organization for the collection of such facts exists our progress must necessarily be slow, one man can do so little. Why should not a collection of such experiences be forwarded by every one of us to some central authority, to be threshed and winnowed by a body of experts. Is it worth while? Yes, but the work demands self-sacrifice and the merging of our individual interests in those of the whole of us. There is, however, this reward, that the culling and collection of facts keeps up an interest in our work, prevents us falling into dull routine, and cultivates systematically the observing faculty. It

has been proposed to do this on a small scale by asking members of societies to study the action of a certain list of remedies; this, although a good plan, is not the best, it tends to limit the observing faculty to certain drugs, and to exclude others. We want a wider scope than this. A man may have a genius for the study of the action of opium or quinine or iron, and be utterly at sea with arsenic, the nitrites, or digitalis; and his instincts, or his experience, may have given him a clue in the one case and not in the other, a clue which might lead to a great discovery if his natural talent were allowed free play.

I have often asked myself whether "forced thinking" is to be compared in value with a "wave of thought" which comes unasked and unexpected. The one is the result of great mental strain, often against the grain, the other is the natural play of the mental faculty and is the output of all that has gone before. To get this from hosts of able observers and thinkers,

and garner the brain-work of the passing hour so that it may not be dispersed and lost, is the great desideratum.

I.—ARSENIC IN CHOREA, DIABETES,
AND ASTHMA.

I hold it to be the duty of every practitioner, who has time and opportunity, to publish the results of his work. In doing this he lays himself open to the criticism that "all this or something very like it has been said before"; but this does not destroy the value of his effort, as he is at any rate confirming the work of others, and, generally speaking, the presentation of his facts will possess some features peculiar to the mind of the observer. The following notes are mere scraps culled from thirty years' work, and although they convey but little if any light on the virtues of the host of *new* remedies which have crowded the market of late years, they deal with some new observations on the value and administration of old and well-tried drugs. It is much more diffi-

cult to extract a new virtue from an old remedy than to point out the salient features of new ones. The former lies hidden under the crust of a well-trodden path, the latter lie scattered on the surface, to be picked up by him who tries them first. Let me draw attention to a very old drug which has been given for good or ill in a vast number of all sorts of cases and conditions.

Arsenic in Chorea.

Although so long and widely used, there are still a few conditions in which arsenic has yielded results which are as yet foreign to most text-books on Therapeutics. First of all as to its value in Chorea. So little stress has been laid on its efficacy in large doses in this disease that a short historical sketch of my experience of it may help to impress its value. The late Mr. Ralph Linton of Chester-le-Street enjoyed a wide reputation for the cure of St.

Vitus Dance. I have seen the desk in his surgery covered with letters from all parts of the North of England asking for a bottle of his infallible cure. He often assured me that he rarely failed to cure the disease in a week, so that one 12 oz. mixture (half an ounce three times a day) was sufficient for the purpose. I could never extract from him even a hint of his method until I was called to see him professionally on his death-bed, when he told me his secret (please note this was nearly twenty years ago), which was simply this—"that Fowler's solution in fifteen- or twenty-drop doses might generally be given to children for a few days without disturbing the stomach, and that so given it was an almost infallible cure for Chorea *within* a week." The first case of Chorea in which I tried this plan was an extremely bad one, and I was quite startled by the rapid and successful result I obtained. Not long after this first case of mine I was asked by my old friend Mr. Sang "to suggest a remedy for a

bad case of Chorea which had resisted the usual remedies." He was somewhat staggered by my suggestion of fifteen-drop doses of Fowler's solution; but he tried it, and succeeded in curing his case in a few days. I next tried the remedy in one of those cases of violent Chorea bordering on mania, and was again rapidly successful. Shortly after this I saw a young lady with Dr. Gibb of Newcastle who had done all that could have been done by the usual methods. We agreed to try the remedy in five-drop doses at first, which did our patient no good; at our next consultation we agreed to give fifteen drops thrice daily. The child was cured in four days and has never ailed since. I might extend these illustrations to many other equally successful cases, but I need not go further than to say that I have only seen one case in nearly twenty years which has resisted this treatment by large doses of arsenic. My old friend Linton was right when he insisted

on a minimum dose of fifteen drops. Ten drops will not do--the dose must reach fifteen drops or more. I need not say the remedy should be taken with food in the middle of a meal, and if it does not act in a week it must be dropped, as after that the toxic action of the remedy would come into play and the patient would be injured.

Arsenic in Diabetes.

Next comes the value of arsenic in diabetes. I do not observe in the various standard works that much stress is laid on the value of arsenic in this complaint. Yet I have found that the most lasting cures of it have been obtained by this drug. When I see a case of diabetes I follow the usual rules of diet first and put the patient on codeia. When by these means I have reduced the quantity of sugar and the attendant symptoms, the next step is to put the patient well under the influence of arsenic and

keep up the treatment for three months, during which period he gradually returns to a diet more or less starchy and saccharine. The best form of arsenic for this prolonged course is the liquor arsenici hydrochloricus. It is better tolerated than Fowler's solution and need not be given with meals. Ten drops is a proper dose, repeated thrice daily. I generally give it in combination with hydrochloric acid and strychnia in the forenoon, but without these additions in the after part of the day. The following cases will illustrate and confirm these statements.

CASE. 1.—A young gentleman (who is now an active clergyman) was the subject of diabetes several years ago; he tried the usual remedies and the strictest forms of diet without permanent benefit, and at last was put on a course of arsenic, which completely cured him.

CASE 2.—A stout old lady consulted me for eczema. Her thirst and dry mouth indicated diabetic origin for the complaint, and her

urine was found to be laden with sugar, its specific gravity 1044, and the quantity 70 ounces per day. The usual diet and pills of codeia with lactucarium soon reduced the quantity of sugar, and I obtained a specific gravity of 1026. The arsenic was then administered over a period of three months, during which the strict rules of diet were gradually relaxed. She has now lived on all sorts of things for more than a year, and her urine is quite free from sugar.

Case 3.—A gentleman of splendid physique and active habits, a country squire, had felt his health fail him during the year 1891, and had lost flesh and complained of thirst and dry mouth. When first he called on me in August of that year the urine had a specific gravity of 1042, and the daily quantity was 60 to 70 ounces. The tests indicated a large quantity of sugar. His appearance gave me great anxiety, as he had changed from a robust powerful man into a complete wreck. In this

case the usual non-saccharine diet and codeia materially lessened the quantity of urine and reduced its specific gravity to 1028. As no marked improvement in the general condition of the patient took place and the sugar did not disappear, the liquor arsenici hydrochloricus was tried, and at the end of six weeks the sugar had entirely disappeared, the specific gravity was 1025, and the quantity 50 oz. per day. During the last year (1892) he has gradually returned to his usual diet without the reappearance of sugar, and he now (1893) feels and looks quite well. In this case the arsenic was given for nine months. At this date (1896) he is still in robust health and free from diabetes.

It seems to me that advantage ought to be taken of the improvement which usually follows the strict diet and codeia, by pushing the arsenical treatment at that moment; patients seem *then* to be peculiarly susceptible to the beneficial action of the remedy, and the moment ought to

be seized for using it with effect and one should not wait for what is going to happen without it.

CASE 4.—A gentleman in the county of Durham developed the usual symptoms of diabetes, and was brought into a fairly satisfactory condition by diet and codeia, but his symptoms did not entirely leave him, and each time he ceased to take codeia and break his rule of diet the sugar returned in large quantities. I could not prevail on him to take the arsenic steadily, and thus he remained more or less diabetic for more than a year. At last he took the arsenic steadily for several weeks, and I was then able to assure him that the sugar was gone and the urine normal. I mention this case as it illustrates the fact that codeia and diet seem to stop short at a considerable reduction of sugar and relief of the urgent symptoms, whilst arsenic steps in to complete the cure. This is also well illustrated by the case of a lady now under my care, who tried the diet and codeia with great benefit, but the

strictest attention to these did not get rid of the sugar, until about ten weeks ago I put her on arsenic and she has now been without sugar for five weeks, during which period her strict rule of diet has been considerably relaxed. It is needless to add to these cases, as I think they sufficiently emphasize the statement, that after the sugar has been reduced by diet and codeia, arsenic often steps in to effect a cure.

Since contributing the above remarks in the columns of the "Lancet" I have met with superabundant evidence of the value of arsenic in diabetes in the hands of others. Not to refer to Sir Dyce Duckworth's remarks at the Meeting of the Medical Section of the British Medical Association in 1893, I may be pardoned for the introduction of some very remarkable evidence given in the following extract from a letter written to me by Dr. Eversley Taylor of Scarborough:—"I am indebted to you for the valuable suggestion of arsenic in diabetes, for which accept my tardy though

sincere thanks. My partners and myself have had the most extraordinary successful results with it; they are so astounding that we dare not publish them. We have found, in pure diabetes, and in that functional glycosuria of obese middle age with its pruritus, and other worries—*it is a charm.*”

Such evidence has great weight, it is spontaneous and unbiassed. Indeed I find numbers of practitioners have been thankful to receive a hint of this kind, having been at their wit's end to devise some more lasting and potent remedy than has hitherto been in vogue.

Asthma.

Let me now direct attention to the use of arsenic in asthma. When a patient suffering from spasmodic asthma calls on me, I almost invariably find the stomach in a wretched state. Such patients are not much relieved by the

so-called antispasmodics for asthma, and they are generally vastly disordered by them. I therefore give this somewhat complicated mixture with the happiest results:—Two drachms of tincture of stramonium, one drachm of carbonate of ammonia, three drachms of carbonate of soda, one drachm of carbonate of magnesia, twenty grains of rhubarb powder, twenty minims of chloroform, peppermint water to eight ounces; half an ounce to be taken three times a day with an ounce of water. Having thus secured a temporary lull in the complaint the patient must at once be put on a course of arsenic, taking care to give just as much as the stomach will bear lest our prime object be defeated, *i.e.*, to keep the terminal (gastric) twigs of the pneumogastric in a favourable condition. By this means I seldom fail to see a successful result—the patient is not only relieved but for the most part cured by a three months' course of arsenic. A good plan is to give the Fowler's solution—five drops—

with breakfast and dinner, and to maintain the corrective dose with stramonium at night. I have referred elsewhere to the action of arsenic in "emphysematous dyspepsia;"* it may be added here that in emphysema of the lungs, especially of the atrophic form, no remedy acts so well as arsenic, and the chief hope of relief in these intractable cases lies in the proper administration of this remedy. In such cases it is best to give one large dose of the liquor arsenici hydrochloricus in the forenoon, and to give it in combination with liquor strychniæ and hydrochloric acid. I am at present attending an old lady who for years has been broken down by asthma, bronchitis, and shortness of breath. Commencing as above with the corrective and stramonium, I have pushed a full course of arsenic and strychnia, and she tells me she now feels quite well. Her breathing is easy, not even wheezy, and is quite inaudible to a bystander.

* "Illustrations of the Inductive Method in Medicine."

She has gained flesh, has recovered the hue of health, and has lost the yellow and hollow cheek and the purple lips of the old disease. Without the tedium of quoting cases, I lay it down as an honest and strong conviction that arsenic is our best cure, and a very certain one, for a particular kind of asthma. The question is "What is this particular form of asthma to which arsenic is applicable?" Note the following points. It is especially useful in the asthma of children and of old emphysematous people. It is not of much use when the case is complicated by bronchitis, nor does it act favourably where a gouty or plethoric state exists. It seems to act best where the nervous system is inherently defective or where the wear and tear of worry or overwork have reduced its stability. The former inherent or inherited kind is met with mostly in asthmatic children; the induced kind is found in broken and old people. Of course I do not pretend to have fathomed the secrets of asthma, and it

is not exactly known what causes the disease. One can only mention the conditions which usually exist with it. The most unlikely people develop asthma: sometimes after an illness—say influenza—sometimes after a shock, or during pregnancy; or they discover it after eating something that never disagreed with them before, or on going to a fresh climate, or from any change of action. But, apart from all these exciting and predisposing causes of asthma, there remains a nerve element at the bottom of most cases, which is best treated by arsenic. As soon as the element of gastric disturbance is got rid of this remedy is our resource and it must have a fair trial by giving it in one way or another over a good many weeks, combining it with strychnia where nerve exhaustion is much marked and the wheeze chiefly expiratory, combining it with soda, rhubarb, and magnesia if these are indicated by digestive disturbances, or with iodide of potassium when this also is indicated.

I must now conclude my observations on this interesting drug, about which so much remains to be said, as its influence is by no means limited to chorea, diabetes, and asthma; nor does its curative action stop at skin disease, cardiac affections, or atonic dyspepsia; it is our sheet-anchor in a host of neuroses and seems to supply a defect in the nervous system of which all the above conditions are but the expression.

An alternative explanation of the action of arsenic is to be found in its antiseptic or germicidal properties. Sometimes this theory of its action seems to fit in best with the effects produced by it. For instance, in those interesting cases where a patient is the subject of asthma and eczema alternately, a remarkable experiment is sometimes seen. There are patients—and I have seen more than one—who for several years have been the subjects of one of three things with scarcely an intermission. He or she is either suffering from

asthma, or from eczema, or is under the influence of arsenic. When the asthma ceases eczema appears, when arsenic is administered the eczema disappears, and when the arsenic is discontinued the attack of asthma or eczema gradually returns. How shall this be accounted for? I think in one of two ways—either by assuming a neurosis, or by supposing that some microbic poison has its nidus or host in such a patient, and that when its action is subdued by arsenic all is well, and when left to its natural development it finds expression in asthma or eczema.

II.—ON BELLADONNA.

There are few remedies which determine the existence of idiosyncrasies in patients more frequently than belladonna. Just as opium, iron, the iodides, mercury, arsenic, or alcohol require a knowledge of the patient's susceptibility before they can be prescribed with certainty, so belladonna demands a like knowledge, and it must be prescribed with caution until it is known whether any special idiosyncrasy with regard to it exists; otherwise one may find the patient covered with an eczematous rash in twenty-four hours; or a most distressing state of the nervous system, accompanied by disturbance of vision and a most unpleasant dryness of the throat and nose, may be met with. So susceptible are some that the mere application of a small belladonna plaster will

produce all the above effects with great violence.* On the other hand, we meet with cases where very large doses of reliable preparations can be taken with impunity, and this without the patients having become accustomed to the drug. I remember a case where *eight* grains of the extract were taken by mistake without a very serious effect on the patient. It seems as if patients do not become accustomed to belladonna as they do to opium; it affects them as decidedly at the end of three months' use of it as it does at the outset. If the patient will bear a large dose he will bear it when he begins to take it as well as when he has taken it for a month; and, further, the same results

* I may here remark that special caution ought to be observed in ordering or applying a belladonna plaster of large size. Anything over six, or even five, inches square is almost sure to produce some systemic effects, such as slight giddiness and uncertainty of gait and vision; and later, when the plaster produces pustular irritation, a fresh absorption of belladonna sometimes takes place, with a more decided occurrence of the above symptoms.

are obtained after it has been given for a long time as at the outset of the treatment. I am a little uncertain as to its cumulative effects, but my experience goes to show that one can set up a certain amount of atropism by certain doses, and that this condition can be maintained indefinitely without much variation of dose, so that I infer that it neither accumulates nor loses its effects.

The action of belladonna has been intimately observed by the strictest scientific methods, but I do not propose to refer to these studies in physiological therapeutics; my object is to draw attention to some points in its action which a prolonged observation in ordinary physician's work has revealed to me. I refer to its action in the following conditions:— (1) in the removal of renal calculi during attacks of renal colic; (2) in dysmenorrhœa; (3) in painful defecation depending on (*a*) displaced and enlarged ovaries, (*b*) retroflexion of the uterus, and (*c*) pelvic exudations and adhe-

sions; (4) in obstruction of the bowels; and (5) in typhlitis.

Renal calculi.—The treatment of renal affections by belladonna has been accepted by the profession for many years, and the efficacy of the drug in relieving renal pain is well established. The pain produced by renal calculi and renal colic is more effectively relieved by belladonna than by any other drug, opium not excepted—at least that is my experience. I was led to infer that something more than mere relief of pain might be expected, by considering the analogous condition of bowel obstruction, in which belladonna has proved so marvellously successful, and the essential point in the removal of renal calculi by belladonna consists in following out the analogy between the two cases. In cases of bowel obstruction we push the treatment far beyond the mere anodyne effects of the drug until the obstruction gives way. In cases of renal colic, we have been content when the agony has subsided. I contend

that we have erred in thus stopping short of more decided results; and if the drug be administered sufficiently long, and in large enough doses, the entire removal of the calculus—first from the pelvis of the kidneys to the bladder, and then from the bladder *per urethram*—often follows.

I will not attempt to theorize on the exact physiological process by which the above results are brought about, either in the case of the bowel or in the case of the renal passages; it seems, however, as if the drug combined in itself the power to relieve spasmodic contraction on the one hand, and produce peristaltic action on the other. Perhaps someone more fully acquainted with physiological therapeutics will enlighten us on this point.

I must, however, proceed to substantiate the above views by quoting some cases in which such striking results were obtained, as to establish the link of causation between the administration of the drug and the removal of

the calculus. Let me quote three cases in point:—

Mrs. E— had suffered for several months from repeated attacks of renal colic. During the last of these attacks I was called in, and found her in the agony of a severe attack. Belladonna was administered until decided toxical effects were produced, and the patient was relieved of her sufferings as soon as the drug began to show its physiological action on the eye and throat. It was then pushed until she was fully under its influence, and in a few hours the stone passed into the utensil with the usual satisfactory click—a lithic acid calculus, as large as a small almond.

The next case was that of a young engineer, who had suffered long and severely from renal pain, with occasional attacks of true renal colic. He had been treated by an experienced practitioner without much relief. I advised the administration of forty drops of tincture of belladonna, to be repeated every hour, or every

two hours, until dilatation of the pupil, dryness of the throat, and delirium were produced. This treatment was commenced in the afternoon, and during the night following he passed a calculus as large as a bean. It is to be noted that the treatment gave speedy relief of pain, but, not content with this, the effect of the drug was kept up so as to ensure the passage of the stone.

The third case was that of a youth, who suffered so severely from renal pain that it was determined, at a consultation of the staff of the Royal Infirmary at Newcastle, to remove the calculus by operation. Before consenting to the operation, his parents brought him to me. I suggested the belladonna treatment, promising to send him to the hospital again if it failed. In this case, twenty drops of tincture of belladonna were given at intervals of an hour, and, at the end of four or five hours, he passed a round and rough calculus, composed of urates; and I was able to send the boy to

the hospital to present the stone to Mr. Page, from whom I received liberal congratulations.

These cases, I maintain, are sufficiently striking to arrest our attention, and to tend to establish the fact that belladonna relieves the pain of renal colic, and, by its peculiar action on the muscular fibres of the urinary passages, removes the stone.

In the present state of pharmacology, we cannot say what its precise mode of action may be. It may act by simply paralysing the circular muscular fibres of these canals, thus allowing the stone to be washed out by the urine; or, while paralysing the circular fibres, it may stimulate the longitudinal fibres. The special point to be remembered is that we are to push the drug to its toxical stage, and keep up its action after the pain has been relieved, until a fair time has been allowed for the expulsion of the stone. We may begin with a forty-drop dose of the tincture, and repeat it every two hours, increasing or diminishing

the dose according to its effect on the patient.

P.S.—Since the above was published I am assured by Dr. Wicks, Dr. Jennings of Jarrow, and others, that this treatment has been tried by them with success in several cases. Let me repeat that the point in the treatment is to push the toxic doses until complete atropism is produced irrespective of the mere relief of pain, and further that this treatment *is of no use except during an attack of colic.*

2. *Dysmenorrhœa*.—Let it be admitted that dysmenorrhœa is due to spasm, or to mechanical obstruction *plus* spasm, or *plus* neuralgia, or *plus* inflammatory or congestive action in or connected with the uterus, and there is a large field for the action of belladonna. A patient well under the influence of the drug is not likely to suffer much from spasm, so that the spasmodic element can be eliminated in a case by a full dose or two of belladonna. If after these doses pain still continues there are no

doubt other elements in the case—mechanical, congestive, or inflammatory—as the neuralgic element is also to a great extent eliminated by belladonna, so that we can get rid of these two causal elements by means of this remedy, and thus the diagnosis is simplified. By far the best method of administering the drug for pelvic pain is the use of the suppository of one grain of the extract repeated every two or four hours. The suppository should be used as soon as the first sign of pain indicates the molimen, and although it is a somewhat disagreeable mode of administration I think the general use of belladonna suppositories for this ailment ought to be advocated, and many sufferers from even slight dysmenorrhœa ought to be provided with this remedy and instructed in the use of it. Full many a tale of woe begins in neglected dysmenorrhœa; spasm leads to congestion, congestion leads to weight of fundus, weight of fundus to flexion, and these to endless miseries. How important,

then, to arrest the progress of events at the outset, when there exists such a simple remedy at hand. Every girl of a certain age who thus suffers, every nurse, and every woman *in loco parentis* ought to be aware of this means of relief and ought to have the remedy at hand.

3. *Painful defecation, &c.*—With regard to the use of belladonna in those cases where there is spasm *plus* some more organic condition, such as exudation in the pelvic cellular tissue, adherent or displaced ovary, and short lateral ligaments causing fixation of the uterus, I have this to say, that it is a most material aid to other remedies, such as mercury or iodide of potassium. In the case of mercury the best plan is to combine it with belladonna in a suppository such as the following, for continuous use until a perceptible effect on thickened tissues or adherent organs is produced: Mercurial ointment, 2 grains; extract of belladonna, 1 grain; oxide of bismuth, 3 grains (to prevent local irritation); and oil of

theobroma, as much as is sufficient; to be inserted twice a day. In this way one secures relief of pelvic pain, and if there is painful defecation, the relief of that too; for there is no remedy which brings about such a comfortable action of the bowels as belladonna. For this latter purpose it may be added to a glycerine suppository, which secures a free as well as an easy movement of the bowels.

4. *Obstruction of the bowels.*—This leads me to the effect (sometimes wonderful) of belladonna in cases of obstruction of the bowels. I shall record one or two cases, so that its *modus operandi* may be discussed, as I think they throw some light on the subject. The question to be decided in the use of belladonna for obstruction in the bowels, or ureters, or uterus, is this:—Is the relief due to relaxation of circular fibres, or is there also a peristalsis set up by it? Let the following case speak for itself. A few years ago the captain of a ship arrived in South Shields far

advanced in strangulated hernia. The late Dr. Heath operated on him, with relief of the symptoms of strangulation, but the patient remained without any action of the bowels for ten days after the operation, by which time stercoraceous vomiting and other symptoms of obstruction set in. When I saw the patient the abdomen was immensely distended, the skin shining from tightness and reddened by turpentine and other applications. The pulse was like a thread, the countenance was anxious, and there were great exhaustion and almost constant vomiting. Taking advantage of the almost excoriated abdominal surface, I applied a piece of lint, 20 in. by 20 in., spread with extract of belladonna slightly attenuated with vaseline. In three hours the most decided atropism was developed, and that same evening a copious and continuous action of the bowels took place, with relief of every symptom. Did this relief come from relaxation of some tightly contracted portion of gut? Or

was there added to this a setting up of very active peristalsis? Or is it possible that there was no spasm at all, but simply an exhausted passive state of the bowel which was removed by the peristaltic effect of the belladonna? At any rate I think one may infer from the very severe action which took place that something more than relaxation of fibres was produced and that the intestines were roused from their dormant inactivity into violent action by the drug. Against this view there have been seen cases where belladonna has failed to cause an action of the bowels until an enema came to its aid and where most remarkable effects have been produced in apparently hopeless cases of obstruction by the administration of an ox-gall enema. Let it be noted, however, that I have seen the ox-gall, the most powerful of all enemata, fail until atropism was set up in association with it; to obtain the best results, therefore, in these cases one ought to induce full atropism and then give the enema. An

additional argument in favour of the propulsive action of belladonna is to be found in those cases of renal colic to which I have referred, where toxic doses of belladonna send the stone down the ureter into the bladder and then out of the bladder per urethram.

5. *Typhlitis*.—A question which often presents itself at the bedside is this:—" Shall I give a purgative—say, castor oil guarded by opium—or shall I rely on belladonna " ? This question will be best considered in connection with the treatment of typhlitis. Experience derived from a large number of cases of typhlitis has taught me this—that after the acute stage, when the patient has been properly treated by opium, and when one has probably to deal with a large effusion or an impacted bowel, belladonna becomes the most valuable and the only safe remedy. At this stage, I repeat, there is generally a locked-up state of the bowels, partly due to opium and partly to the inflammatory effusion, and woe betide the prac-

itioner *and the patient* if an attempt is made to move the bowels by any kind of purgative. The best plan of treatment for these conditions is this:—firstly, to apply an ointment consisting of ext. belladon. ʒi. , ungt. iod. ʒi. , on a pledget of lint 4 in. by 8 in., over the seat of effusion; and, secondly, to administer a grain of extract of belladonna as a suppository every six or eight hours until atropism is set up, and then to administer an enema of warm olive oil, and, if that fails, an enema of ox-gall and soap with a crystal of washing soda added. In this way we attack the effusion by iodine, soothe the pain and relax spasm by belladonna, and thus prepare the way for an easy action of the bowels without the risk of sitting up fresh typhlitic irritation. With reference to the ointment of iodine and belladonna it has proved of immense value to me in cases of pelvic exudation and enlarged ovary, as also in subacute pelvic cellulitis. It is likewise very useful in rheumatic joints and in all kindred affections.

Of course, there is nothing new in the application of either iodine or belladonna; but my points are, firstly, the combination, and secondly, its *continuous* application as distinguished from rubbing in. As soon as the iodine begins to irritate, the belladonna is more rapidly absorbed and its action is thus intensified, and there is obtained the combination of a counter-irritant, and absorbent, and a sedative.

III.—MERCURY IN HEART DISEASE.

I have been somewhat disappointed in the discussion at Edinburgh on cardiac stimulants, inasmuch as I see hardly any reference was made to the value of Mercury in cases of heart disease. I fear that our views on this subject have not advanced of late, and the mind of the profession has not yet grasped the idea that Mercury has a value in heart disease far beyond what may be termed its "alterative" action. The administration of this drug in cardiac dropsy and in all cases of passive congestion of the pulmonary and portal systems is as old as the hills, and we old-fashioned physicians know well enough that thirty or forty years ago no one thought of treating these conditions except by a mercurial pill followed by a saline or jalap purgative and a diuretic mixture containing digitalis. Then came the days

when the diuretic mixture was changed for one of muriate or ammonio-citrate of iron with digitalis, and some of us will remember the remarkable papers of Dr. Handfield Jones on the value of this combination. Now we have come to the days of arsenic, strychnia, iodide of potassium, and a host of cardiac stimulants, together with rest and cardiac gymnastics. I expect that in most cases these remedies do but assist nature in bringing about healthy compensatory changes by preventing degeneration of the muscles and vessels of the heart and main arteries. Repeated observation has convinced me that Mercury possesses a value far beyond the supposed alterative nature of its action—not that it fails to relieve congested vessels by drainage or osmosis, for doubtless this lays the foundation of its further action on the heart itself, and it would fail to relieve the heart did it not eliminate biliary and other effete matter from the blood and tissues of the liver and portal system ; but when due allow-

ance has been made for these primary effects there remains strong evidence that it tells upon the heart itself. Its special benefits are exercised in cases of dilated and hypertrophied heart. By means of it the "thready," weak, rapid, and irregular pulse, is made full soft regular and slow, with manifest relief of such symptoms as dyspnœa, pectoral weight and tightness, and sensations of faintness. The "angina sine dolore" is often marvelously relieved and removed by two or three grains of blue pill three times a day, and the severe forms of "angina pectoris" not unfrequently disappear under its influence. While the nitrites, nitro-glycerine, &c., afford temporary relief, this remedy is much more permanent in its effect. Nor need I say that to give digitalis a fair chance it is absolutely necessary to pave its way by preliminary doses of mercury and to foster its action by repeated doses. Many of the cases where digitalis, &c., fail or seem to fail by supposed accumulation, depend

on this, that we are giving the digitalis without the blue pill or calomel, and it often falls to the lot of the consultant to make a great hit by inserting the mercurial into the previous treatment. Much more true is this of iron and digitalis combined. We see a patient with engorged vessels and labouring heart taking iron and digitalis much to the detriment and not to the benefit of the case—each dose is but adding fuel to the fire—energising the heart in its futile attempts to drive the blood through the engorged vascular system, and thus exhausting the organ in its hopeless struggle. We change all this by frequently repeated doses of mercury; we drain the portal system, we exosmose the water from the general vascular system, we suck up dropsical accumulations, and by pushing the drug we get hold of the heart itself and produce the slow, soft, regular, and *effectual* pulse, giving the digitalis or strophanthus a fair chance to come in as cardiac tonics; and at last we complete the

circle by arriving at the point whence we departed with the patient in a very different condition, and can now give the iron and digitalis with impunity—nay, with immense benefit. Let the following case speak for itself, and its quotation is the more apt as the patient came from being under the care of an eminent Edinburgh physician in the very condition I have described—viz., a dilated and hypertrophied heart goaded to excess in a useless effort by iron and digitalis.

A case of dilated and hypertrophied heart treated by 20,000 grains of blue pill; recovery from advanced cardiac dropsy followed by ten years of good health.—The patient, a hard-working man, was a Scotchman, and had all the talent, physique, and energy peculiar to his race. He gradually developed symptoms of valvular disease and dilated heart when about forty-eight years of age. He went to Edinburgh and was under treatment there for several weeks. At last he was sent home with the assurance that nothing

more could be done for him. My friend Dr. Wilson of Wallsend was summoned to see him, and he called me in consultation on the case. We found the patient in the following condition. He was propped up in bed. His countenance was anxious, his eyes seemed to protrude from their sockets, and his face was bathed in perspiration, with a livid colour of the lips and skin. His breathing was shallow, frequent, and difficult, accompanied by a constant hacking and ineffectual cough. His pulse was hardly perceptible, irregular and thready. The heart's action was tumultuous and irregular, the cardiac sounds were almost inaudible, and a distant murmur could be heard with both sounds at both the right and the left apex. No cardiac impulses could be felt except a wavy movement at the epigastrium. The liver was enlarged, and the abdominal cavity was distended with fluid, as were also the lower extremities and the scrotum. The pleural cavities were also occupied to a con-

siderable extent by fluid effusion. We determined to abandon the usual cardiac stimulants and give him two or three grains of blue pill thrice a day, and at the end of two days we gave him a smart purge of jalap. Greatly encouraged by the result, we pushed the blue pill (two to three grains three times a day) for a week or more, and during that time a steady relief of all the symptoms ensued. The countenance became placid, the tongue (before dry and brown) became moist, and the pulse more regular, full, and soft; the dropsical accumulations gradually receded, and the breathing resumed a normal character. Now was the time for digitalis—always best given on a falling tide in dropsy—and doubtless the patient owed much of his rapid recovery to the temporary and occasional use of that drug; but the staple of the treatment was the steady use of blue pill, now gradually diminished to two pills a day, and finally to a five-grain pill at bedtime. To sum up the

results ; the man felt himself to be quite free from all his troubles in six weeks, at which date I met him in the Newcastle railway station and had the pleasure of presenting my convalescent to an extra-mural teacher of eminence from Edinburgh. In a short time the patient resumed his duties and became a useful and active member of society.

Now the point of interest in this case is this—and I want to emphasize it—that during the next ten years the patient stuck to his blue pill every night with few intermissions, and declared that whenever he did leave it off for a few nights his heart began to trouble him and his breathing became difficult. As will be seen from the post-mortem notes, this nightly dose was in some mysterious way enabling his heart, massive with disease, to discharge its duties in such a way as to make its owner feel quite well. During the ten or eleven years of his subsequent life, Dr. Wilson calculates, he took 20,000 grains of

blue pill; it never salivated him, it neither purged nor nauseated him, and it never gave his breath a touch of fetor. At last, however, his old symptoms returned, the machinery was worn out, and he died chiefly from the pressure of abdominal fluid on his enormous heart. I regret that such a case should be so roughly handled, it deserves a more accurate and detailed description, and I trust Dr. Wilson will some day give his details of it. My son, Professor George Murray, and Dr. Wilson made a post-mortem examination, of which these are the notes :—" On opening the thorax the heart was seen to be enormously enlarged, and the space occupied by it measured eight inches across and eight inches from above downward. The lungs were displaced backward and compressed by the enlarged heart. Heart: The right auricle was very much dilated, almost to the size of a man's fist. The walls were thickened and the muscular tissue hypertrophied, The auriculo-ventricular orifice

was very much increased in size and readily admitted eight fingers at once. The tricuspid valves were much thickened and opaque. The right ventricle was much dilated and the walls thin. The left auricle was much dilated, the walls thick, and the endocardium opaque. In one part of the wall of the auricle there were two bars of calcified muscular tissue united by a crossbar of the same substance. The auriculo-ventricular opening was much constricted and hardly admitted the tip of the index-finger. The mitral valves were adherent, so that there was only a small opening like a button-hole between them. The valves were thick and rigid, but not calcified. The left ventricle was dilated, but its capacity was only about one-half that of the right ventricle. The walls were not much increased in thickness. Abdomen: The peritoneal cavity contained a considerable amount of clear fluid. The spleen showed a dense white patch of scar tissue one-fourth of an inch deep in the centre—evidently

the site of a very old infarction. The surface of the liver was nodular; on section it showed dense strands of connective tissue of advanced cirrhosis."

Remarks.—I need not say that to rescue a man from the jaws of death and give him ten or eleven years of fairly good health confers a reputation on any drug. Its potency is established. We therefore ask, How does it act? Is it a cardiac tonic, stimulant, alterative, or what? Or does it act on the secondary apparatus of the circulation and the blood itself by reducing the resistance of the vessels, diminishing the volume of blood and altering its fibrinity so as to make it circulate more freely? I think it does all these things, and at the same time it soothes the heart by purifying its blood and tissues of effete accumulations.

IV.—CALOMEL IN LARGE DOSES.

Contributed to the "Northumberland and Durham Medical Journal."

Amid the rush of new remedies I fear some of our most valuable old fashioned drugs are in danger of being swept away and forgotten. Notable among these are the preparations of antimony, now rarely used, and still more notable is the decrease of attention paid to the preparations of mercury—once the sheet anchor of the busy practitioner. Forty years ago, the most eminent physicians and surgeons in Newcastle were all believers in the high value of mercury, and they were all highly skilled in the use of it.

My old friend, Sir John Fife, used to say to the students, "Mercury is my god, and I am his prophet," so profound was his faith in its

general utility. Sir John had a great reputation for his success in treating cholera, and his treatment was simply calomel and opium in repeated doses, with an effervescing saline mixture.

The late Dr. White, a thoroughly practical physician, with keen and natural medical instincts, was also thoroughly conversant with the use of mercury. I could give some amusing incidents of Dr. White's sagacity. Long ere iodide of potash was recognised as of much value in syphilis, White used to say to us :—"Gentleman, when you have to deal with pain in the head, tap the cranium of the patient, and if you come across a *tender* spot, give iodide of potash; I don't know why, but my experience has taught me this lesson."

The late Dr. Dawson, too, was a firm believer in mercury, especially in pelvic troubles, and I must confess I have found no other remedy of equal value in pelvic inflammations and their consequences. The late Mr. Sep.

Rayne was another apostle of mercury. He knew well both how and when to use the drug; he knew also how to combine it to get a specific result. He knew the value of a small two or three grain dose of calomel in gently altering or moving the tide of the secretions, and he knew how to modify this by combining it with Dover's powder or with antimony in James' powder. He knew also how and when to put in a big dose of ten grains of calomel when nothing short of a profound impression could save the patient from imminent danger. For instance, at the outset of delirium tremens in a robust subject, he would invariably give ten grains, to clear the system of foul secretions and alcoholic products, before administering an opiate; or, in a milder case, I have seen him get the happiest results by ten grains of blue pill combined with a grain or two of opium. In such a case one sees the patient with a flushed face and congested eye, a dry tongue, a hard pulse, and a dry

skin, and tremulous with restlessness; and we change all that into a calm equable condition, with a soft pulse, a cool moist skin, a moist mouth and tongue, with general relief of all urgent symptoms, by giving ten grains of blue pill and a grain or two of opium. I must be pardoned for these preliminary "prosaics." They may not be without use in these days of what is called "Scientific Medicine," which sadly lacks the practical elements of every-day work.

Large doses.—Speaking of large doses, I have had one or two remarkable experiences to which I must refer. About fifteen years ago, I was driving past a house in Wentworth Place when I saw a furious maniac being held back from an open window by two policemen. He was struggling hard to get out, and making a great disturbance. I went upstairs and found a doctor in the room who explained that the patient was an epileptic, suffering from acute mania, and that he had tried in vain to ad-

minister food and medicine. The maniac was too strong and furious to be dealt with. I, therefore, sent for chloroform and calomel; with a little manœuvring, I got the patient slightly under the influence of the chloroform, and then I put thirty grains of calomel on the back of his tongue, followed by a table-spoonful of cold water. I then left him in charge of the doctor and policemen and returned in two hours, when I found our patient on the night commode, perfectly subdued, very limp, and nauseated. After much profuse purging and vomiting he became as quiet as a child, and fell into a sound sleep, to awake in a perfectly calm frame of mind.

In another case to which I was called by the late Mr. Linton, I found the patient was a man of immense strength, and naturally of a ferocious disposition. He was now suffering from acute mania, and was bound hand and foot in a strait-waistcoat. So ferocious was he that he had bitten the attendants very

seriously, in spite of the strait-waistcoat, and they dared no longer to approach him. Having procured chloroform and calomel, I threw a towel saturated with chloroform over his head, and contrived to keep it there until the man was unconscious. I then administered a tea-spoonful of calomel (which I afterwards made out to be about eighty grains) with the happiest result. As soon as we allowed him to regain consciousness, we saw that the man was nauseated, subdued, and occupied by his own internal sensations, and ere long his fury entirely left him. When purging and sickness set in he became perfectly limp, and was easily removed to an asylum, where he made a good recovery. I have no doubt the nausea so peculiar to calomel is a most valuable aid to the action of the drug in these cases. But the good effect of the drug does not end here. Most of these cases have, as an exciting or predisposing cause, a vastly disordered state of the secretions, poisoning

the blood with ptomaines, &c. The calomel eliminates these from the alimentary canal; and more, it drains the blood of the portal system of all such impurities; and further, it reduces the engorgement of the whole portal system, and thus gives the brain a fair chance of recovering from the local conditions which are causing mania.

Action of Mercury.

The action of mercury is, I believe, of two-fold explanation. First, it has a remarkable effect, and a direct one, on the gastric and intestinal secretions, turning them in the right direction and allaying irritation of the mucous surfaces as it does this. Take, for instance, a case of sub-acute gastritis, accompanied by severe vomiting of bile and mucus and the rejection of every particle of food. In such a case we insinuate a five-grain dose of calomel by putting the dry powder on the tongue and

washing it down with one tablespoonful of cold water; in a few minutes the pain, the vomiting, and the nausea cease, and these yield to the further action of the medicine to such an extent that food is easily taken with a relish and comfort to the patient.

The secondary action of such a dose is doubtless eliminative, and probably antiseptic; it eliminates by setting up osmotic action, by which impure matter is drained from the blood, as I have shown long ago in a paper contributed to the "Journal of Anatomy and Physiology." It is antiseptic as a chloride of mercury wherever it meets with germ life; and, therefore, when this happens in the intestines or stomach, its action will, I suppose, be beneficial as a germicide. On this point I prefer to leave the bacteriologist to speak, as I have no special knowledge. I should, however, like to ask whether the presence of a few grains of calomel in the gastro-intestinal juices is likely to be sufficiently powerful to act as an

effectual germicide. It seems to me to be a subject for careful enquiry and experiment, as we are at present (as far as I know) groping and acting in the dark, and a better knowledge of the *modus operandi* of mercury would, I believe, throw a flood of light on therapeutics in general. We might thus catch a glimpse of some general therapeutic law, of which we stand sadly in need. For instance suppose we get an important result from calomel, and suppose we could find out the secrets of the intimate action by which this result has been produced, we should then be in a position to see whether the secret of its action did not apply to many other conditions and thus carry its action far and wide in other cases.

V.—NITRATE OF SILVER IN EPILEPSY.

I have read with great interest the Manchester address on the "Dynamics of Life" and the clinical lecture on "Silver and Epilepsy" by Dr. Gowers. The former is a marvellously lucid exposition of what can at present be known of the intimate physics of life, and it penetrates further into the "mist on the horizon" than anything hitherto produced. I trust Dr. Gowers will give us another insight into the workings of his mind on this subject. If I have grasped his meaning aright, he thinks with reason that ordinary muscular contraction is (like the heat given off in ordinary combustion) due to the force set free in the muscle by the union of carbon and oxygen, the atoms of which in combining have parted with some portion of their minute motion, and therefore move less rapidly when combined,

the amount of energy given off being the difference between the minute motion of the *compound* and the minute motion of the *elementary* atoms. He thinks that while the burning of fuel such as coal is comparable to the *ordinary* contraction of muscle, the violent explosion of more highly combustible matter is comparable to the violent muscular explosion of an epileptic fit. With regard, then, to the treatment of epilepsy, it is manifest that our efforts must be directed to the removal or hindrance of this tendency to an explosive discharge in the nervous and muscular systems. Without attempting to explain how this inhibited state of the nerve centres is brought about by several remedies whose effects are fully established by abundant experience, I think I am justified in saying that some of them at any rate do their work by hindering this explosive union of atoms or molecules. One of these remedies—nitrate of silver—offers a fair field for study in this direction. I have often expressed the

opinion, years ago, that a deposit of silver in some form, probably oxide, in the molecules or submolecules of the nerve cells and fibres, so altered the polarity, *i.e.*, the explosive tendency—of the molecules as to arrest the epileptic discharge. And now comes the more accurate and more complete interpretation of Dr. Gowers, who gives us a mental picture of what actually takes place in the action of the nervous and muscular tissues when force (minute motion) is set free. He points out that the susceptibility to nervous and muscular action needs but the influence of a stimulus—*i.e.*, of “added motion”—to bring about a manifestation of the latent energy in these tissues, and that an increase of susceptibility or of stimulus—*i.e.*, added motion—may evoke an epileptic explosion. It seems to me a fair inference to suppose that a remedy which is deposited in the tissues—perhaps irrevocably deposited—may by its chemical inertia interfere by its presence with the minute motion or

chemical activity of adjacent atoms and thus prevent their explosive union. The solution of this question would be materially aided by an inquiry into the nature of the silver deposits. Do they exist permanently in the interior of the body as they do in the exposed parts? They doubtless do exist in some of the mucous membranes—in the mouth, for instance. Are there any changes of colour in the nerve tissues indicating an oxide of silver there? A microscopic, or chemical, or perhaps a spectroscopic, examination would help us to decide this question of silver deposit. As I know of no ascertained facts I am obliged to fall back on the old-fashioned empirical resource*—ex-

* Since this paper was published I have received several communications on this subject of argyria—one from Sir Dyce Duckworth—and one or two from German correspondents, which go to show that the oxide of silver is doubtless deposited in various internal parts, but I have not yet heard of a microscopic examination of the cells, fibres, and inter-cellular tissue of the brain which shows the existence of deposit there.

perience. What does experience teach us as to the use of nitrate of silver in epilepsy? Experience has taught us two remarkable things—first, that nitrate of silver will cure epilepsy where the bromides have utterly failed; and, secondly, that a patient who has subjected himself or herself to a course of silver producing a deposit, secures a remarkable immunity from a number of small nervous ailments, such as neuralgia, gastric uneasiness with nervousness, &c. I think this latter effect throws a flood of light on the subject and corroborates the view that “the silver blunts the polarity of the nerve centres,” renders them stable and less easily disturbed by outward influences which would come under the head of Dr. Gowers’s “added motion.” In confirmation of these statements I must produce some “facts,” or my theory will fall to the ground.

I submit the following case, which is one of several, in proof of the power of nitrate of

silver to cure epilepsy. Twenty years ago I was consulted by the manager of an important railway department. He had become a confirmed epileptic, suffering from frequent and severe fits. Bromides had been fully tried in large doses by several eminent physicians. Partial relief only was obtained, and that at a great sacrifice of memory and general business alertness (I sometimes wonder whether the mere postponement of fits is worth the serious detriment which the patient suffers in these respects from bromides), and the gentleman was face to face with the resignation of a valuable appointment. I plainly put before him the alternative—Did he mind the leaden tint which would certainly follow a long course of silver if he got rid of his fits? “Not a bit,” said he, “it is a mere featherweight in the balance compared with my present heavy burden.” So I put him on nitrate of silver for nine months. He had no fit after the first month of the course, and he has never had one

since. His health has been much better—no small ailments—and he bears me no grudge. I passed him the other day, and he, as he always does, lifted his hat with a grateful smile. This is in severe contrast with Dr. Gowers's patient, who jacketed his medical attendant; but then, poor fellow, he was not cured.

Now, again, a gentleman in easy circumstances has been more or less epileptic for thirty years; he has been a prey to a number of small ailments, to which, I believe, bromide by lowering vitality largely conduced. Neuralgic headaches, muscular twitching, lassitude, frequent lapses of *petit mal*, not to speak of loss of memory and an occasional large fit, combined to render his life a burden. Five years ago he deliberately accepted a course of nitrate of silver, regardless of consequences, and has since reaped his reward. He is now seldom out of sorts, is comparatively free from headaches, has no twitchings, and has never

had a trace of epilepsy, not even *petit mal*. I might refer to several similar cases. The above sufficiently illustrate my views. I ought to state that in this latter case the faintest touch of leaden hue was produced, and the patient was not aware of it.

With regard to the effect of nitrate of silver in minor ailments, there is no more striking illustration of it than in those cases of weak irritable stomach which are characterised by intense depression of spirits, apprehensions, and failure of pluck and courage. In these cases a remarkable change takes place both in the functions of the stomach and in the tone of the nerve centres of emotion. I will refer the readers to an old work, "Johnson on Indigestion," which contains many illustrations of these effects of nitrate of silver. To get the best results in these "stomach cases" the nitrate should be dissolved in distilled water and taken on an empty stomach. I think one gets a distinct local effect on the

mucous membrane as well as the more remote effects on the nerve centres by giving it in this form.

I fear my rough notes will stand out in rude contrast when placed beside the refined disquisition of Dr. Gowers, but this result I may claim—that I have given a practical application of his theory, and to some extent may have confirmed his speculative views.

VI.—OUR MISTAKES.

*An Address to the Clinical Society, Newcastle
on Tyne.*

The man who makes no mistakes seldom or never does anything worthy of note. Life is so closely interwoven with tentative efforts on the part of those who keep its machinery in motion, that it would be strange indeed if mistakes were not often made. As experience, often dearly bought, on the part of both doctor and patient, is our best guide amidst the pitfalls which surround us, I think it is a most profitable task to go over the ground of our past experiences and gather up the lessons taught us by our failures and mistakes. A great general was once found making a careful survey of the field of a battle which he had won. On being asked what he was doing, he said he was *studying his mistakes*—a lesson well worthy of our imitation. Our mistakes may be divided into (1) those which can and ought to be

avoided by every intelligent, well-taught, and experienced practitioner; (2) those which can only be avoided by an unusual amount of experience and insight; (3) those which no amount of care, experience, or insight would enable us to avoid. I shall give examples of these as we proceed. In disease nature is forever making fresh experiments before our eyes, and we are to watch how she varies the experiment, lest its many variations from the normal type of the disease mislead us into a false diagnosis. Each disease varies as much in expression as the human countenance. In my experience no two cases are exactly alike. What is described as a typical case exists only in the imagination of the writer of a textbook, or a lecturer to his class. This typical case is like the archetypal vertebra, which exists only in the brain of the anatomist; all real vertebræ are, like all real diseases, variations from the typical. To push the analogy, just as the skilled anatomist can amplify the most rudi-

mentary vertebra into one possessed of all its parts, so the skilled physician can grasp the true nature of a case and build up a diagnosis from the faintest indications ; and, further, he can simplify and reduce to order the most irregular and complicated manifestations of a difficult case. It is by the exercise of this constructive faculty on the one hand, and by that analytical faculty on the other, that our difficulties are to be overcome and our mistakes avoided.

With regard to the first class of mistakes—namely, those which ought to be avoided,—let me remark that the best of us will sometimes be caught napping. “*Nemo mortalium omnibus horis sapit.*” We somehow get on the wrong scent in a case, and, becoming occupied by a train of minor symptoms, miss its main features ; or we are the victims of a preconceived opinion, and it shuts our eyes to facts which would be patent enough if we brought an open mind to the case. I shall

give one or two illustrations of the kind of thing which occurs.

There is no more common source of error in diagnosis than the subtle development of hydrothorax or empyema after an acute illness. When these diseases arise from an attack of pleurisy pure and simple there is little fear of their being overlooked—in fact, they are then often diagnosed when they can hardly be said to exist. But when they supervene on another acute illness, such as typhoid or scarlet fever, the practitioner is liable to miss their existence, and to attribute the rapid breathing, quick pulse, and fever, to some other sequel, such as tubercular disease, bronchitis, albuminuria; yet the faintest suspicion would lead to the easy detection of the true state of affairs. The immovable chest wall, the absence of respiratory sounds, the dulness on percussion and the absence of vocal fremitus, are indications too clear to be easily mistaken. The mistake arises from a want of suspicion or a

want of alertness, or from a want of care in making a thorough and frequent examination of the patient.

“Strip him!” is a motto which ought to be engraven on all our minds.

This brings me to another source of error; that is, the want of a thorough examination of the various canals and cavities—the mouth, the throat, the nares, the ear, the rectum, the generative and urinary tracts, &c. I need not say that I refer to an examination by all the specular aids we possess. No small number of failures and mistakes arise from inattention to this point. Let me give one or two illustrations. Whenever we are at a loss to account for high temperature, the throat should be examined. There may be a good deal of mischief there without any complaint on the part of the patient. I well remember being called to two consecutive cases—one of supposed pneumonia, the other of quasi-puerperal fever,—in each of which I found that diph-

theria was the true cause of the illness. A very short time after these cases occurred a gentleman called on me with an apparently feverish cold. As he did not get well, he asked me to call on him; and I, thinking his symptoms were due to the above cause, handed him over to the care of an exceedingly acute local practitioner, who discovered at his first visit that our patient had a diphtheritic throat. Most medical men will agree that such mistakes are not uncommon, and we need to add to our first motto, "Strip him!" another equally golden rule—to examine the canals and cavities. Another illustration may be added. A short time ago I was asked to see a child suffering from obstinate hæmorrhage from the bowels, and I said at once, "I shall find a pediculated polypus in the rectum," which was found and detached at the moment. My experience at the Children's Hospital had taught me this lesson years ago.

A further illustration still occurs to me. A

gentleman, whose name is now a household word throughout the world, called on me in great alarm on account of an attack of blood-spitting, which came on while he was dressing. I saw a good deal of blood on his handkerchief, and on examining his chest I heard, or thought I heard, rough breathing and fine crepitation over the left apex. I told him this, and treated him accordingly. On going to his shop he, knowing something about dentistry, looked into his mouth, and discovered that the bleeding was from a spongy gum, which he had doubtless lacerated with his toothbrush. I need not say that he lost confidence in me, and I lost my patient. Time would fail me to make further remarks on these casual cases, where mistakes are often made for want of thought and care.

I will now relate a series of cases of cancer where a diagnosis was only to be made by an unusual amount of care, experience, and insight ; and if I seem to be egotistical by taking

praise or blame to myself, I trust my unintentional fault will be pardoned. I am going almost entirely on my own experience, and I am thus compelled to speak of myself oftener than I like. Cancer of the internal organs rarely fails to puzzle us at the outset, and a diagnosis is seldom made until the disease has made considerable progress. In the absence of distinct physical signs, and with only subjective symptoms, such as pain, to depend on, we are very liable to be landed in a grave difficulty of diagnosis. If we suggest there is, or may be, malignant disease, the responsibility is great; if we risk an opposite opinion the responsibility is equally great, as the sufferings of the patient are often urgent and demand an explanation. Mistakes can only be avoided here by the utmost caution and the most watchful investigation. There is, however, one feature about these cases which occurs to me when I look back on a long series of them. It is this, that most of them have

given at a somewhat early period just the faintest hint of what is going on. I have often felt too late that a wise interpretation of this or that faint hint would have saved me and others from the ignominy of being forestalled in our diagnosis by someone else. It is easy to name a full blown flower, but difficult enough when that flower is in the bud. I shall now give an experience founded on five cases of internal cancer, which will illustrate my meaning.

Some years ago a case occurred in the practice of the late Dr. Douglas of Gateshead, in which the chief, and for a long time the only symptom was pain in the tibia. The man was emaciated and suffered intensely. He was seen by two or three physicians and one or two leading surgeons. None of us could form a diagnosis. There was neither swelling, heat, tenderness, nor alteration in the shape or appearance of the limb. At length some softness and shining of the skin marked the seat

of pain, and even then grave doubts were entertained as to the nature of the disease. Within a few days of his death I was called to see him again, and I found he had expectorated some currant-jelly-like matter; but even this failed to suggest a true diagnosis, and so the man died of "no one knew what." Meditating on this case, it all at once flashed into my mind that the red-currant-jelly expectoration was a hint of the true nature of the case, and that the man had doubtless died of cancer of the lung, following or accompanied by malignant disease of the leg. I felt that a serious error by default of diagnosis had occurred, and was much humiliated thereby.

Not long after this I was called to see a case in Weardale, and was told on arrival that the patient was suffering from congestion of the lungs. The expectoration, which was shown me before I examined the patient, at once convinced me that this was a case of cancer of the lung. There were, however, no physical

signs; and on mentioning my conviction to the medical attendant he was very sceptical, and threw on me the enormous responsibility of giving an opinion based on the one isolated fact of currant-jelly expectoration. I therefore re-examined the chest and in doing so discovered a cancerous nodule in the right mammary gland, which of course set the diagnosis at rest. An unfavourable opinion was given, which soon afterwards proved mournfully correct.

A short time after this I was called, with my friend, Dr. Adam Wilson, to see the married daughter of the above lady. We were informed that her arm had been amputated above the elbow by Sir Joseph Lister for disease in the forearm. The patient was then complaining of pain at the posterior base of the right lung, but the physical signs were faint and doubtful. We therefore reserved our opinion, but privately agreed that it was probably a case of cancer of the lung, and that

Sir Joseph Lister had amputated high for malignant disease of the forearm. In due time came the currant-jelly expectoration, and she died of cancer of the lung. In these cases the faintest hints were given at the outset, and errors by default of diagnosis could only be avoided by paying heed to them. We ought to make ourselves well acquainted with this red- and black-currant-jelly like expectoration of cancer of the lung so as to be able to distinguish it from the bistre or sooty tint of pulmonary apoplexy and hæmoptysis.

Pursuing this subject, two other instructive cases occur to me. About fifteen years ago the late Mr. Manford had a case which puzzled several of us. The chief symptom in this case, for at least six months, was an intolerable pain on the front of the right thigh three inches above the knee-joint. All sorts of opinions were expressed, and of course hysterical knee was the favourite. At last it occurred to me that, this region being supplied by terminal

twigs of the obturator nerve, we ought to examine that nerve along its whole course. and this could only be done per rectum. On passing the finger the secret was at once discovered to be a carcinomatous mass springing from the side of the pelvis and growing into that part of the pelvic cavity which is traversed by the obturator nerve.

It is interesting to observe how often our cases run in pairs or groups. With the last case fresh in my mind I was called to see a gentleman in the north. On going into his room his wife said, "Do not bother him by many questions." On asking him to tell me of his complaint briefly, he, pointing to the inside of his thigh, said, "I can tell you in three words, it's pain there." I asked for vaseline, examined the rectum, and found a malignant mass in the pelvis—a sad solution of a case which had misled two excellent practitioners to suppose he suffered from disease of the pelvis of the kidney. These cases show

how narrowly we sometimes miss a diagnosis, and show how important it is to take note of these slight and faint hints if we are to save ourselves from failure. We must, however, take heed lest a great success in diagnosis and treatment unduly impresses itself on our minds, and we begin to seek for the same thing and do the same thing in every case. It is easy to yield to this temptation, and we need to guard ourselves. I have again and again seen even great men plant their favourite diagnosis on the most unlikely cases. Two or three patients of a really great physician came to me a few years ago, each stating they had irritation of the ureter, until at last I was able to say, "Oh! I see you have consulted Dr. So-and-So." In each of these cases the true ailment proved to be lateral flexion of the uterus. Not that I have escaped this mental infection, as I am free to admit. I may probably have treated irritated ureter for lateral flexion. Nothing short of a large view and a well-balanced mind can save us from this kind of thing.

An illustration of another kind of mistake which sometimes occurs as the result of a paucity of experience and a good deal of science may here be introduced. It also illustrates the danger of the so-called *nimia diligentia* in treating a case by everything but the right thing. I was called to see a favourite child of wealthy people in Yorkshire; the child was supposed to be suffering from inflammation of the brain. I found a strong plethoric child, with flushed face and suffused and congested eyes. He was suffering from pain in the head, restlessness, and great irritability, together with anorexia and a coated tongue. He was in a darkened room, two nurses were in attendance, and an apparatus for circulating iced water over the head was in active operation. The temperature was taken at frequent intervals, and repeated doses of aconite were being administered. The expression of the child's countenance and his evidently clear intellect did not convey the idea

of meningitis to my mind, and I asked when his bowels had acted. No one quite knew, and it was clear they had not acted for a day or two. I gave my opinion to the medical attendant that it was a case of disordered secretions, and insisted on giving three grains of calomel, followed by a dose of senna. We met again in a few hours, and found the patient sitting up in bed quite cheerful and comfortable, after a free purgation, and he was soon quite well. I do not mean to cast any reflection on what is called scientific medicine, but I think an old-fashioned doctor would probably have purged at the outset and saved all this bother. Let us never forget the marvels achieved by our old friend calomel.

To omit the abdomen as the most fruitful field of all sorts of mistakes would be to omit the character of Hamlet from the play. The many different organs contained in it ministering to functions so different as digestion, excretion, assimilation, and reproduction, give rise

to such enormous varieties of physical signs and symptoms that it would be strange indeed if we did not often fail to make an accurate diagnosis and use appropriate treatment here. Added to this is the ever-varying condition of the abdominal walls due to distension and emptiness of the hollow viscera, the engorgement of the solid organs, and the amount of abdominal fat which often comes and goes with remarkable rapidity. These difficulties, from complication of organs and their changeable condition, can hardly be said to exist in the head or chest, but they are somewhat compensated for by the ease with which the abdomen can be manipulated.

To mention a few of our chief difficulties is all that can be accomplished in a short address. First, there are those connected with abdominal aneurism, on which a book might be written, and an amusing one, for I shall never forget, when preparing an article on this subject, the extraordinary hits and

misses in diagnosis which turned up in looking through the scattered literature on the subject. Existing aneurisms have been diagnosed as renal, hepatic, ovarian, and uterine tumours, and conversely nearly every variety of abdominal tumour, and often "no tumour at all," has been diagnosed as aneurism. My well-known case of aneurism of the abdominal aorta was at one time treated for lumbago, and was subsequently said to be a fæcal accumulation by a man of great experience. The pelvic department of the abdomen is even more dangerous ground than the abdomen proper. It is here that confusion still reigns, as evidenced by the number of so-called exploratory incisions now made in that region. A good book on the diagnosis of pelvic disease is still wanted, but I doubt if the data for it have yet been obtained. The almost infinite variety of conditions brought about by pregnancy and menstruation almost defy classification, and thus general rules are almost out of

the question. For instance, ovarian tumours, simple as their diagnosis generally is, often deceive the most experienced, and we must not rely on general rules even here, or the opened abdomen may possibly stagger our nerves and try our resources. Twice over I have been misled by trusting too much to a resonant note in the flank and a dull abdominal dome, where I discovered our mistake to be due to the fact that the intestines were bound down by adhesions in the lumbar region so closely as to give resonance there in ordinary ascites. Then, again, there are mistakes attaching themselves to pregnancy, about which some experienced accoucheur might give a highly interesting discourse. I recollect a startling case where a patient was about to be admitted to an institution for the removal of an ovarian tumour; but her own doctor thought he would like to do the operation himself, and sent her to me to confirm the diagnosis. Labour pains came on while she

was in my waiting-room, and she had just time to reach home in a cab before she was confined. Then, again, there are those trying cases of women who marry late in life, and, being possessed by a longing to have a child, arrive at the menopause and begin to swell visibly. Beware of such women. If you say they are not pregnant they will not believe you, because "they feel a movement which cannot be mistaken." If you for a moment favour their wishes, and incautiously admit it may be *so* with them, you have staked your reputation on a broken reed, and a day of reckoning lies in store for you some few months hence, "when it does not and will not come off." To be called in under such circumstances is one of the most trying and delicate tasks for a consultant. By a word or a look he may shatter his friend's reputation throughout a wide circle; and yet the truth must be told, either abruptly or—far better—by a gradual undeceiving of the patient's mind.

Far more serious difficulties surround us when we are face to face with ectopic or tubal gestation. A certain diagnosis in many of these cases is impossible without the exploratory incision, and even then the complications may prevent a satisfactory diagnosis—nay, more, I have seen cases of this kind so complicated that a post-mortem examination failed to reveal the true state of the case. These are cases of the third order, in which a faulty diagnosis casts no blame on us. Let me give the history of a case illustrating the extreme difficulty or impossibility of arriving at a certain diagnosis. I do so the more readily because I believe the case is unique.

Some years ago the late Mr. John Hope and I saw a patient suffering from intolerable pain in the testes. Both testicles were enlarged, the left as large as a goose's egg, the right slightly smaller. As the enlargement and sufferings increased, especially on the left side, we decided to remove that testicle. On doing so

we found a healthy testicle encased in dense concentric layers of suet-like fat about an inch thick. The relief obtained made the patient urgent to have the right testicle removed too, which was done with complete relief.

Some months afterwards this man came to me again in a deplorable condition. His body was emaciated, but the abdomen had become enormously enlarged and extremely painful. The abdominal swelling was uniform and dough-like on palpation, and absolutely dull on percussion, without any evidence of fluctuation. His chief symptom was a mucous diarrhœa over which remedies had but slight control. He died of exhaustion.

On making a post-mortem examination we found the enlargement was entirely due to the presence of hundreds of fatty tumours scattered throughout the folds of the peritoneum. The mesentery was a mass of them. They varied from the size of a pea to that of an orange, and each was composed of concentric layers of

suet-like fat, similar to that found around the testicles. The smallest were concentric as distinctly as the largest. The most remarkable developments were in the appendices epiploicæ each of which extended into the abdomen like a large bunch of grapes studded with fatty nodules.

We might, if we had had a similar experience, have divined from the testicular encasements the real cause of the abdominal enlargement; but, lacking this, I think it was impossible to make a sure diagnosis. But I must draw this part of my subject to a close, or I should like to have alluded to the difficulties which surround the medical man who is called to see a patient in the initial stage of any of the acute febrile diseases, especially of infectious diseases. If he speaks of his suspicion too soon he may find he has given needless alarm; if he hesitates too long he may be blamed for not speaking soon enough. A wary outlook, an expectant state of mind, and a

knowledge of human nature, are all needed to save him from a false position.

Lastly, the mistakes which occur in the *treatment* of disease may be divided into those arising from a false diagnosis and those in which the wrong remedy is used where the diagnosis is correct. I need not say that for the most part a false diagnosis is the cause of most of our mistakes, but this has already been dealt with. With regard to the misapplication of the treatment when the diagnosis is correct, I may say this is often owing to the want of a true appreciation of the temperament and constitution of the patient, whereby we are led to give what is good enough for the disease but bad for the patient. Let us ever remember, therefore, that we are treating *patients* as well as *diseases*, and what may, rigidly speaking, be the right thing for the disease is often the wrong thing for the patient. Take the case of tonics such as iron and quinine. I know of nothing which has destroyed the confidence of

patients in medical men and in medicines more frequently than the administration of these remedies to debilitated, anæmic, and phthisical patients when they were quite unable to bear them.

How often do we see a patient in the early stage of phthisis suffering from the miseries of dyspepsia added to those of his disease. And yet we find such a patient is being treated by cod-liver oil, or iron and quinine phosphates, which only add still further to his misery. Or, again, take the case of anæmia in which the fault lies in a weak and irritable gastric membrane. Nine out of ten of such patients become considerably worse when treated by ferruginous tonics. Or, again, take the case of a patient recovering from an attack of gastric catarrh: to select the exact moment when the gastric membrane will be able to bear a tonic, and decide what tonic to give it, is one of our most difficult problems.

In early phthisis, in anæmia, in the exhaus-

tion of gastric catarrh, I rarely venture on any so-called tonic medicine, and prefer to give aids to digestion and sedative correctives until I am well assured the stomach will tolerate such remedies as iron, quinine, or cod-liver oil. I cannot help thinking these misapplications of the *right* remedy for the *disease* in *unsuitable* cases is the secret source of that sceptical attitude which many able men have assumed towards the beneficial action of medicines. In early life they expected too much, and blamed the medicine when really it was its application which was at fault, and so they have lost faith. I, for my own part, have an undying, nay, an increasingly vital faith in the virtue of medicines, and I hope to live to see the day when mankind at large will accord to rational scientific medication the place it undoubtedly deserves to hold in its esteem. Many hints which I could give as the result of thirty years careful study of the action of medicines crowd upon my mind, but I must not trespass further

except to say that much depends upon the method of combining our remedies. I believe in combinations; without them we cannot put limitations to the action of our drugs, and we cannot guide them to the right spot. One medicine, so to speak, conditions another, and some are complementary to each other. Take digitalis as an example. Do we wish to act upon a weak heart in an anæmic subject we combine it with iron. Do we wish it to act upon the heart when all the organs are engorged from regurgitation in a plethoric subject, we give it combined with mercury and purgatives: or, do we wish to relieve pulmonary congestion arising from the same cause, we combine it with ether and ammonia; or, do we wish it to act on a sluggish kidney, we add some suitable diuretic. We thus, as it were, condition and conduct our remedy to do its work in the right direction. To do otherwise would lead to serious mistakes, and might shake our faith in the power of this mighty drug.



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